

Abstract

Here we investigated the effect of the insect pest whitefly (*Bemisia tabaci*), cassava mosaic disease (CMD) and cassava brown streak disease (CBSD) on cassava root yield and quality in two cropping seasons 2014–2015 and 2015–2016 on ten cassava varieties in Tanzania. ANOVA (sum of squares or SS) revealed that the time of planting (42.7%) and cassava variety (29.5%) had the largest effect on whitefly population. Not surprisingly, cassava varieties also had the highest effect (SS 39.8 to 70.4%) on both diseases and yield. An increase in whitefly population led to higher disease incidences and severity in 2015–2016 compared to 2014–2015. Some CBSD-resistant and tolerant cassava varieties like Namikonga and Kiroba, respectively, harboured high whitefly populations. The CMD, CBSD and whitefly-susceptible variety, Mreteta, showed highest yield losses of up to 60%, while the resistant variety NDL 2005/1471 had approximately 1% loss. Deployment of varieties resistant to both diseases and whitefly is thus necessary to safeguard cassava production and food security of vulnerable communities in the affected African countries.